

Part I: Burden of Diabetes in South Carolina

Chapter One Demographics and Access to Health Care

Demographics

South Carolina has experienced several dramatic changes in population in the past 10 years. These changes have a huge impact on the interpretation and evaluation of health statistics. As of the 2000 census, South Carolina's population was reported to be just over four million people. This is an increase of over a half million people since 1990.

Table 1. Population Distribution as of 2000 Census

| | | |
|-----------------------------------|-----------|--------|
| Total Population | 4,012,012 | 100.0% |
| Men | 1,948,929 | 48.6% |
| Women | 2,063,083 | 51.4% |
| Under 18 years | 1,011,027 | 25.2% |
| 18 to 44 | 1,592,420 | 39.7% |
| 45 to 64 years | 923,232 | 23.0% |
| 65 years and over | 485,333 | 12.1% |
| White, not Hispanic | 2,652,291 | 66.1% |
| Black, not Hispanic | 1,178,486 | 29.4% |
| Hispanic or Latino | 95,076 | 2.4% |
| American Indian and Alaska Native | 12,765 | 0.3% |
| Asian | 35,568 | 0.9% |
| Other* | 37,826 | 0.9% |

Source: U.S. Census Bureau, Census 2000.

*Other Includes Native Hawaiian or Pacific Islander, Two or More Races, or Some Other Race

The population for South Carolina is about 67% white, 30% black, and 3% "other". The "Other" category includes Asian, American Indian, Pacific Islander, and other race groups, as reported by the Census Bureau. Table 1 shows the 2000 population

for South Carolina. Figures 1 through 3 show the breakdown of the population by race/ethnicity and age.

Figure 1a. South Carolina Population 1990 Racial / Ethnic Distribution

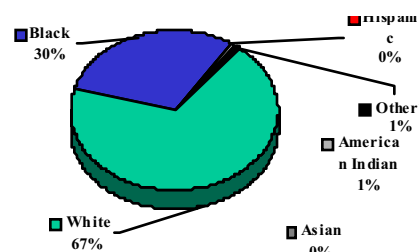
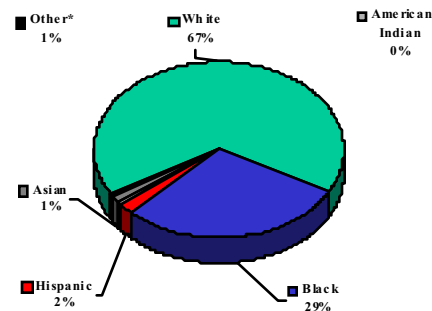


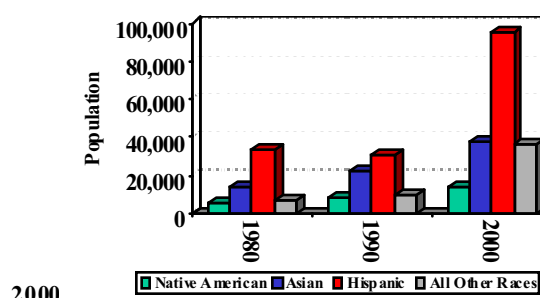
Figure 1b. South Carolina Population 2000 Racial / Ethnic Distribution



Distribution

The population of South Carolina is becoming much more diverse. Since 1980, the numbers of Hispanic citizens of all races has doubled, American Indians, Asians, Pacific Islanders, and other races other than white or Black have shown a three-to seven-fold increase, while the number of white and Blacks has changed very little. Figure 2 shows the change in the ethnic makeup of the South Carolina population in the past 20 years.

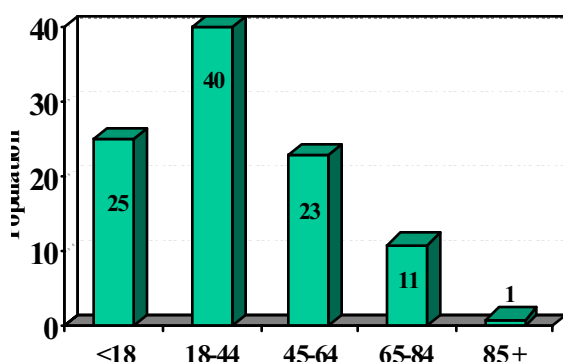
Figure 2. Trends in Race/Ethnic Populations 1980-



2000

The majority of South Carolina's population falls into the 18-44-age category, but almost one quarter (23%) falls into the 45-64 age group, where most diabetes is diagnosed (Figure 3).

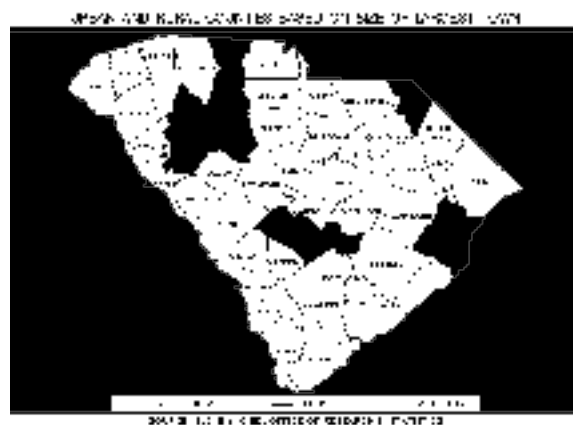
Figure 3. Age Distribution



Urban VS Rural

The Office of Research and Statistics (ORS) of the South Carolina has researched a variety of health indicators by urban vs. rural counties. The location of these counties is found in figure 4. Urban counties have been defined as those with the largest town having a population of 25,000 or greater. The counties defined as urban by the ORS are Aiken, Anderson, Beaufort, Berkeley, Charleston, Dorchester, Florence, Greenville, Horry, Lexington, Pickens, Richland, Spartanburg, Sumter, and York. Lexington and Pickens counties are considered urban since they are bedroom communities to major metropolitan areas.

Figure 4. Urban, Rural and Very Rural Counties in South Carolina



Rural counties, which comprise 29% of South Carolina's population, are those whose largest town has a population less than 25,000 but greater than 10,000. Rural counties are Cherokee, Georgetown, Greenwood, Laurens, Marlboro, Orangeburg, and Union.

Very Rural counties are those with largest town less than 10,000 population. Very rural counties are designated as Abbeville, Allendale, Bamberg, Barnwell, Calhoun, Chester, Chesterfield, Clarendon, Colleton, Darlington, Dillon, Edgefield, Fairfield, Hampton, Jasper, Kershaw, Lancaster, Lee, Marion, McCormick, Oconee, Saluda, and Williamsburg.

For the rural counties in South Carolina, the ORS reported that:

- 29% of South Carolina's population is rural.
- 40% of South Carolina's rural population is black.

For the very rural counties in South Carolina, the ORS reported that:

- 18% of South Carolina's population is very rural.

- 42% of South Carolina's very rural population is black.

For urban counties the ORS reported that:

- 71% of South Carolina's population is urban.
- 74% of South Carolina's urban population is white.
- 26% of South Carolina's urban population is black.

The ORS conducted research on preventable hospitalizations in urban vs. rural counties. Preventable hospitalizations, which are also known as Ambulatory Care Sensitive Conditions (ACSC), refer to hospitalizations for conditions that should be treatable on an outpatient basis. Thus, these hospitalizations may indicate an inability of certain individuals to access necessary preventive and outpatient care. Ensuring equitable access to health care is an important public policy goal for the state of South Carolina. Preventable hospitalizations are one measure of access to health care.

Analyses reveal that rural residents are more likely to be hospitalized for conditions that should have been treatable on an outpatient basis. Here are some of the consequences of lack of access to health care in the rural areas of the state:

- Overall, rural residents are 26% more likely to be hospitalized for a possibly preventable hospitalization than urban residents.
- Rural adults aged 19-44 are 23% more likely to be hospitalized for diabetes than urban adults.
- Rural blacks are 57% more likely to die from diabetes than are rural whites.

- Very rural blacks are 70% more likely to die from diabetes than are very rural whites.
- 48% of rural residents (and 55% of very rural residents) who are hospitalized are hospitalized out of county (versus 19% in urban areas).

The Uninsured in South Carolina

The rural areas are commonly known to have higher rates of uninsured citizens as well as higher proportions of citizens who receive Medicaid or Medicare. Lack of insurance decreases significantly the likelihood of receiving timely and appropriate care. High proportions of Medicaid and Medicare clients affect the reimbursement levels of hospitals and physician practices as well as having implications on individual's likelihood of receiving specialty care.

- Everyday in rural South Carolina, 112 people receive medical services for which they cannot pay. Over half (54%) of these uninsured rural residents are non-white.
- Almost one out of five people from rural areas who visit the ER have no source of insurance.
- Medicare and Medicaid paid for 55% of rural inpatient hospitalizations in 1999.
- Medicaid pays for a greater proportion of hospitalizations and ER visits in rural than urban areas.

The South Carolina Department of Insurance has published on their website (<http://www.doi.state.sc.us/Eng/Public/Health/>) a report pertaining to the increasing number of people without health insurance in South Carolina:

During the past decade, the number of people without health insurance in the

United States increased from approximately 31 million to 44.3 million people. National statistics indicate that 15.4% of South Carolinians were uninsured in 1998. One year later, the number of South Carolinians that were uninsured grew to 17.6% or 683,890 people. Interestingly, eight in ten of the uninsured are members of working families . . .

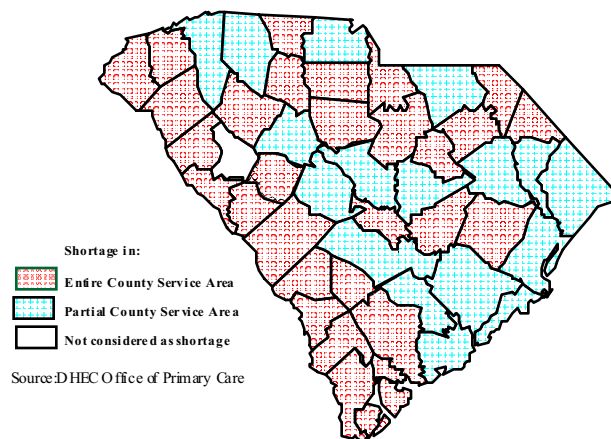
Studies indicate that the majority of the uninsured are non-elderly full-time workers. According to estimates from the Kaiser Foundation, 26% of non-elderly African Americans are uninsured in South Carolina. Typically, they earn low wages and work in service industries, agricultural enterprises, and small businesses that do not offer health insurance to their employees. Those small businesses that are able to offer insurance coverage often require premium cost sharing . . . In addition, rising health care costs have made it difficult for small employers to offer coverage. Rising health care costs are a result of many factors, however it is a fact that access to necessary preventative and outpatient care will lower the number of preventable hospitalizations. Rural adults in South Carolina, aged 19-44, are 34% more likely to be hospitalized for a possibly preventable hospitalization than urban adults. Medicare and Medicaid paid for 35% of rural inpatient hospitalizations in 1999 in South Carolina.

Consequently, people with low incomes and no insurance coverage often are unable to seek or obtain timely or adequate health care, turning to emergency room or other safety net providers, such as community health centers and public hospitals, or forego care entirely. Compared to those who are insured, the uninsured tend to have more serious preventable illnesses that threaten their work productivity and ability to retain jobs.

Health Professional Shortages

One of the first priorities is to have sufficient numbers of health professionals that are distributed according to need, to provide ongoing, quality diabetes care and self-management education and support for persons with diabetes. Most counties in South Carolina have a shortage of health professionals as defined by the Office of Primary Care of the Department of Health and Environmental Control (DHEC). Figure 5 depicts the distribution of medical professional shortage area in South Carolina in 2002. Twenty-nine counties were defined medical professional shortage areas, and 16 counties had areas within the county that were defined as medical professional shortage areas.

Figure 5. South Carolina Health Professional Shortage Areas, by County 2002



In 2003, 44 of the 46 counties of South Carolina were designated **MEDICALLY UNDERSERVED AREAS** by the U.S. Public Health Service for either the total county or certain areas of the county. Only two counties, Cherokee and Laurens, are deemed to be adequately served. This designation takes into account physician-to-population ratio, infant mortality rate, and poverty level, and percent of population age 65 years and older. In health professional shortage areas, there are 18 federally funded

community health centers distributed throughout the state. These health centers provide services based on a “sliding fee scale” that can assist those with limited incomes who may need assistance with financing health care, self-management education, medications, and monitoring supplies. (A listing of South Carolina’s Community Health Centers may be obtained via the Internet at http://web.infoave.net/~scphca/community_health_centers.htm).

Physicians

Physicians play important roles in health care for diabetes. A report was made to the Commission on Higher Education and the South Carolina Data Oversight Council by the Health Professions Functional Work Group, Primary Care Subcommittee, and South Carolina Budget and Control Office of Research and Statistics in 1995. This report predicted a 20% shortage of primary care physicians in South Carolina by the year 2005. The projected demand for total primary care physicians on a statewide basis for 2005 is 2,971 while the projected supply is 2,382. Of the primary care physicians, Family Practice is expected to see a mere 3.6% increase between 1994 and 2005. Pediatrics, Internal Medicine, and Obstetrics/Gynecology physicians are expected to increase by 36.4%, 29.2%, and 21.2% respectively between 1994 and 2005.

Table 2. Physician Specialties most involved in Diabetes Care in South Carolina

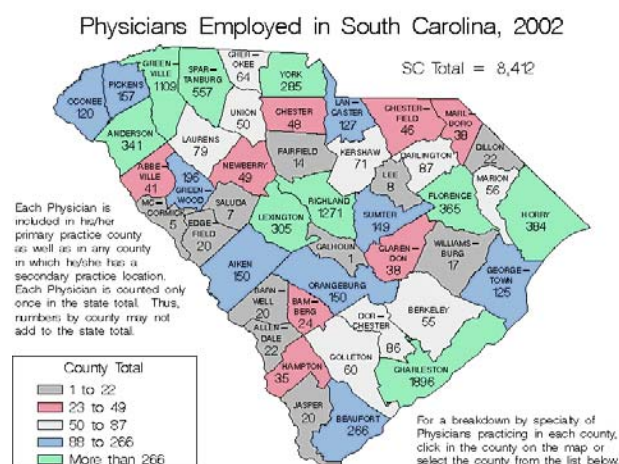
| Specialty | 1995 | 2002 | Patients Per Physician (2002) |
|-------------------|------|------|-------------------------------|
| Internal Medicine | 394 | 394 | 760 |
| Cardiology | 119 | 331 | 905 |
| Endocrinology | 11 | 47 | 6,372 |
| Nephrology | 43 | 76 | 3,941 |
| Neurology | 54 | 157 | 1,908 |

| | | | |
|-------------------------|-----|------|-----|
| Ophthalmology | 177 | 310 | 966 |
| Family/General Practice | 747 | 1509 | 198 |

Table 2 lists the number of Physicians (based on data from DSC Diabetes Center Council Strategic Plan) in those specialties most involved with diabetes care. The table also lists ratios of patients to physician (i.e. number of people with diabetes served, on average, by one physician of that specialty). Using the figure of 299,500 persons with diabetes in South Carolina gives one a sense of the relative scarcity of physician care available to patients with diabetes.

In addition to the number of physicians available being far less than the number needed, the geographic distribution of physicians imposes another problem for people with diabetes. Most of South Carolina’s physicians are located in three major city areas; very few of them practice in the counties that have higher prevalence rates for diabetes. As shown in Figure 6, physician-to-population ratio is as low as two per 1,000 population in 12 of 15 counties that have a high prevalence of diabetes (previously greater than state average).

Figure 6. Physicians Employed in South Carolina, 2002



Other Health Professionals

In addition to physicians, many other health professionals, including podiatrists, Certified Diabetes Educators (CDEs), dietitians, pharmacists and nurses play a vital role in diabetes care and education. Table 3 shows that the number of nurses and CDEs has increased since 1994. The Diabetes Initiative and its partners have offered training courses to help prepare eligible health professionals to become CDEs. As the choices of medications for management expands, the pharmacist's role is increasingly vital in the control and management of diabetes. Great efforts have been made to provide diabetes disease management training programs for pharmacists in recent years. At least 94 pharmacists have completed an advanced diabetes disease management program. Some of these pharmacists have developed diabetes self-management education programs for their clients, and are working with other health providers to improve diabetes outcomes.

Table 3. Number of Other Health Professionals, SC

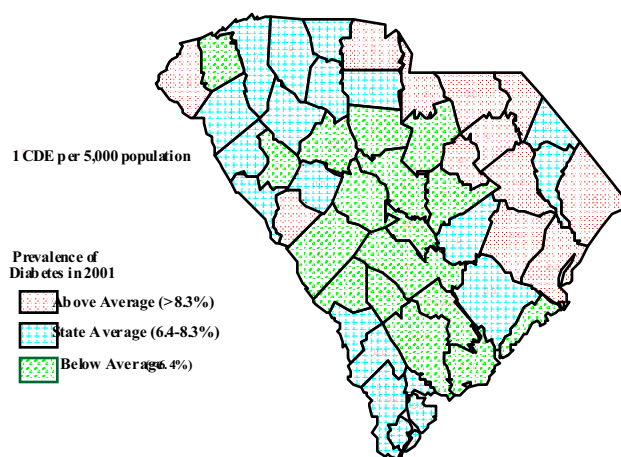
| Specialty | Number in 2002 | Number in 1999 | Number in 1994* |
|--|----------------|----------------|-----------------|
| Certified Diabetes Educators | 251 | 139 | 85 |
| Pharmacists with advanced diabetes education | NA | 94 | N/A |
| Podiatrists | | 76 | 02 |
| Physician Assistants | 287 | 206 | N/A |
| Advance Practice Nurses | 1571 | 2,220 | N/A |
| Registered Dietitians | 750 | 746 | 751 |
| Registered Nurses (RNs) | 30,722 | 37,402 | 23,435 |
| Licensed Practical Nurses | 9,415 | 11,240 | 8,572 |

* Abstracted from 1996 Burden of Diabetes Report

Certified Diabetes Educators

There were 251 Certified Diabetes Educators (CDE) in South Carolina as of 2002. On average, one CDE needs to serve 15,500 residents in South Carolina. Figure 7 shows that the number of CDEs is less than 1/10,000 of county population in approximately 30 counties. Among 12 counties that have a prevalence of diabetes greater than the state average, two counties (Edgefield and Marlboro) do not have even one CDE, and the ratio of number of CDEs to county population is less than 1/10,000 in 6 counties.

Figure 7. Average Number of CDEs in South Carolina 2002

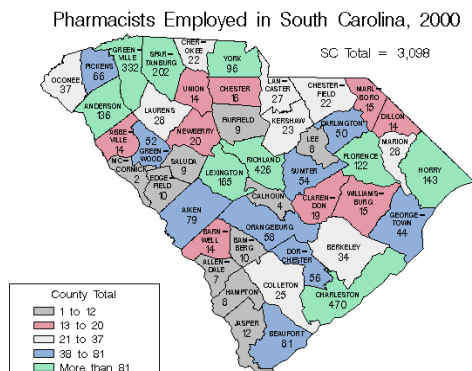


Pharmacists

Figure 8 shows number of pharmacists employed in each county in 1999. Approximately one fourth of the counties in South Carolina do not have any pharmacists with advanced diabetes education. In the 15 counties with the highest prevalence of

diabetes, three do not have any pharmacists with advanced diabetes education.

Figure 8. Pharmacists Employed in South Carolina, 2000



Diabetes Programs

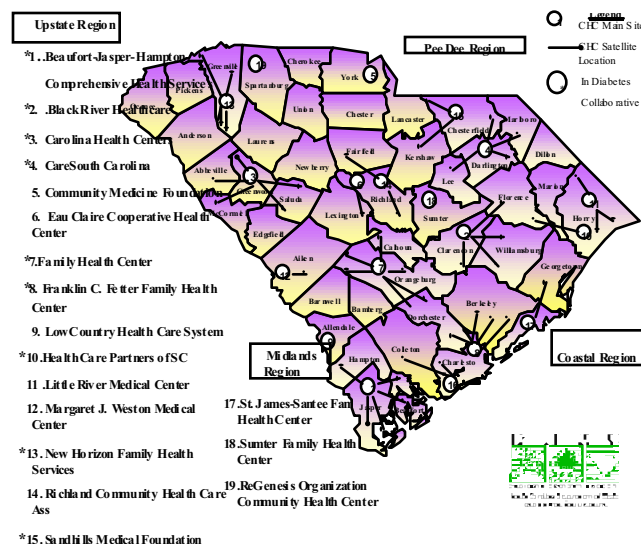
Primary Health Care Centers

Medically underserved areas throughout South Carolina are provided high-quality medical care from 19 Community Health Centers that see more than 162,000 people annually, mostly blacks. Patients who often have no other access to primary health care are treated by physician-led health care teams that handle everything from management of chronic illnesses and immunizations to episodic sick care. Expensive and frequent visits to the emergency room are lessened or entirely eliminated by providing the communities with access to primary care.

South Carolina Primary Care Association, the lead Primary Care Association for the Southeast, currently has nine community health centers that are participating in the Diabetes Collaborative. SC DPCP staff resources are focused within eight of the centers across the state to demonstrate effective interventions. The goal of these interventions is to improve diabetes health care in office-based practices in medically

underserved areas of the state and increase diabetes self-management in patients who attend these primary care centers (Figure 9).

Figure 9. Diabetes Programs in South Carolina, 2001



Local Diabetes Coalitions

In an effort to increase awareness of the prevention and management of diabetes, local community coalition formation began in the fall of 1999. To ensure that there was a statewide linkage among the coalitions, Principles of Organization were also developed.

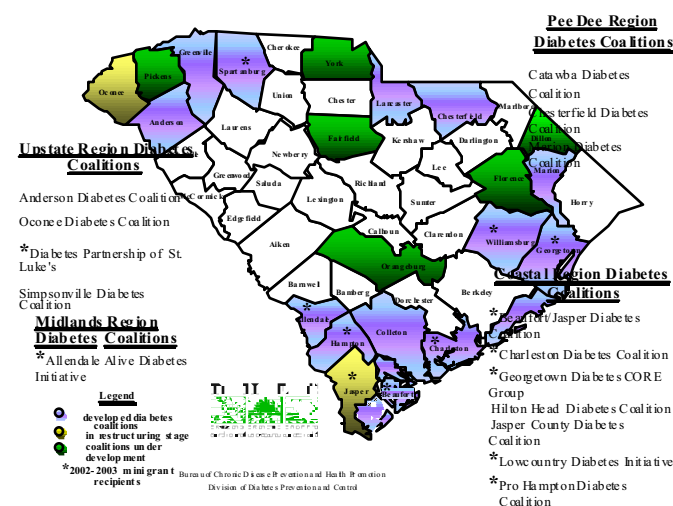
Currently there are seventeen community coalition chapters within the four Regions across the state. The goals of the coalitions are to provide a forum for locally driven and controlled diabetes-related activities; share resources and information; increase communication and coordination; and obtain collaboration between organizations.

During both the 2002-2003 and 2003-2004 grant cycle, the SCDPCP has offered mini-grants to several of the local community coalitions to help them with infrastructure building and sustainability. During 2002-2003, seven of the community coalitions were funded and awards ranged from \$1800

to \$2000. During the 2003-2004-grant cycle, eight community coalitions were funded ranging from \$3000-\$7000. Six of the coalitions received capacity building funding to complete the strategic planning process and two received basic implementation funding. Some planned activities will include completing Diabetes Today Training, conducting needs and resources assessments in order to develop a strategic plan for the coalition, and hosting National Diabetes Education Program (NDEP) and American Diabetes Association (ADA) campaigns (Figure 10).

professionals, especially in rural areas, has serious implications with regard to access to health care in the near future. These issues impact the patients, the public health system, health care providers, the insurance industry, and the economy, as people in poor health are much less productive than healthy people.

Figure 10. South Carolina DPCP Diabetes Coalitions



Summary

According to the 2000 census, South Carolina's population has increased by over five hundred thousand since 1990, and is becoming more diverse. The populations of races other than white or black have increased dramatically while the number of white and blacks has changed very little. The number of trained health care professionals has increased, but is still short of desirable goals.

The combination of a growing and increasingly diverse population, increasing uninsured, shortages of medical